Title: Feedback regarding the validation server
Deliverable number: D9.1
Revision 03 - Status: Final
Date of issue: 08/11/2013

The NORS validation server: feedback report

Deliverable title	Feedback report regarding the NORS validation server
Deliverable number	D9.1
Revision	03
Status	Final
Planned delivery date	05/11/2013
Date of issue	08/11/2013
Nature of deliverable	Report
Lead partner	University of Liège
Dissemination level	Internal report

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DOCUMENT PROPERTIES

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Applicable and reference documents

NORS Description of Work
Validation server User Requirements Document (D8.1), May 14, 2012
Validation server Design Document (D8.2), July 9, 2012
Validation server in test-phase (D8.3), August 1, 2013
O3-fsd7-MWR-20130801T0000-20130831T0000-BERN-UBERN.pdf
O3-fkya-FTIR-20130901T0000-20130930T0000-JUNGFRAUJOCH-ULG.pdf

Acronyms and abbreviations

FTIR	Fourier Transform InfraRed spectroscopy
GEOMS	Generic Earth Observation Metadata Standard
IFS-MOZ	Integrated Forecasting System – MOZART model
MACC-II	Monitoring of Atmospheric Composition and Climate (II)
MWR	MicroWave Radiometry
NDACC	Network for the Detection of Atmospheric Composition Change
NORS	Network of Remote Sensing Ground-Based Observations for the GMES Atmospheric Service
NVS	NORS Validation Server
PM	Progress Meeting
UVVIS	Ultraviolet visible spectroscopy

1. Introduction

The NORS Validation Server (aka NVS) is a key component of the project. This web-based application is designed such as to operationally produce validation reports for well identified combinations of Copernicus and NORS data, for a suite of products (see Table 1 in D8.1). In addition, generation of dedicated reports (e.g. including additional sites) is part of the NVS definition, such that the expansion of the tool to cope with further sites and/or instruments should be easily possible at any latter stage.

The NVS was defined, designed and built within the framework of workpackage 8. The server –actually still hosted at S&T– entered its test phase in August 2013, with access to the NORS (and MACC-II) community and request for feedback sent on August 26, 2013. Moreover, the NVS interface and capabilities were successfully demonstrated at the NORS PM2 meeting, and additional elements were collected on that occasion. The present document intends to summarize the remarks and suggestions for change or improvement collected thus far from the end users. It further includes the list of known issues and missing features as identified by the NVS developers themselves (an up-to-date list is available anytime at https://nors.stcorp.nl/known-issues/).

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2. Sample reports

Two illustrative NVS reports are appended to the present deliverable. This allows appraising their overall structure, current content (figures, statistics, data file list and unambiguous identification) and presentation. NVS reports conveniently visualize the atmospheric profiles and column densities of the trace gases observed by the NORS instruments or calculated by the MACC reanalysis.

3. NORS Validation Server status

There was a substantial amount of positive comments following the entry into operation of the server. Particularly appreciated were the two-column selection method for the technique/target/time period under investigation as well as the pdf validation reports for their overall clear presentation and useful content.

3.1. User comments and requests

Numerous comments and suggestions have been collected to date. Known issues or features still missing at the time of writing have also been identified by the users. We enumerate all these elements here below on a per-category basis.

1. Data available on the NVS
   o Some sites and/or instruments are currently missing [Feat. 1.1]
   o Extending the files available to all GEOMS-described NDACC data [Feat. 1.2]
   o Do not limit the files available to the official NORS stations [Feat. 1.3]
2. Metadata / data description
   o There is no description of the MACC versions [Feat. 2.1]
   o Better naming of the experiments [Feat. 2.2]
   o No information on the smoothing and regridding processes [Feat. 2.3]

3. Files submission
   o How does the NVS deal with submitted incomplete files? (e.g. files with columns only, but no profile) [Feat. 3.1]

4. NVS interface
   o There is no general introduction about the scope of the NVS website [Feat. 4.1]
   o Confusing punctuation symbols in the password [Feat. 4.2]
   o No shortcut to specific graphs inside the reports [Feat. 4.3]
   o Mismatch concerning the number of available reports between both the intruments/experiments and geographic filters; i.e. no update of the number of available parameters, model or instrument types following a selection in the right-hand side column [Feat. 4.4]
   o No location (latitude/longitude) and/or clickable world map of the stations [Feat. 4.4]
   o Is the NVS properly configured to provide specific information according to the different categories of users? [Feat. 4.5]
   o The "fnyp" experiment model (M2; IFS-MOZ AN e-suite) reports should be shown by default [Feat. 4.6]

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    o Some empty frames show up in some instances (e.g. O3.column.partial for MACC and NORS and their differences, see O3-fkya-FTIR validation report for September in appendix) [Feat. 4.7]

5. Graph/plot/chart design
   o Better identification of the data sets [Feat. 5.1]
   o Consistent size for the symbols (see very small symbols in the appended MWR reports) [Feat. 5.2]
   o Consistent scales for the plot axes [Feat. 5.3]
   o Multiple experiments in one plot [Feat. 5.4]
   o Same colour conventions for all plots (e.g. NORS in green, MACC in red) [Feat. 5.5]
   o Some errors in the data plotting (e.g. negative O_3 model outputs) [Feat. 5.6]

6. NVS outputs
   o Outputs format (better PDF than PNG) [Feat. 6.1]
   o Monthly results are available in anti-chronological order [Feat. 6.2]
   o How to deal with the increasing number of plots in the reports due to the increasing number of stations? [Feat. 6.3]

3.2. Issues/missing features identified by the developers (as of Oct. 16)

    o No LIDAR reports are being created [Feat. 1.1]
    o No UVVIS reports are being created [Feat. 1.1]
    o Generating the 'last three months' reports takes too long to be done on a daily basis [Feat. 7.1]
    o VIP users can request custom reports, but they are not actually generated [Feat. 7.2]
    o No selection of seasonal/latitudinal time range for reports generation [Feat. 7.3]
    o Reports not yet being regenerated if updated NORS data arrives [Feat. 7.4]
    o Internal timezone issue in storing of metadata may lead to time series in intervals being a couple of hours off at the edges [Feat. 7.5]
    o No user-upload of custom NORS or MACC data streams [Feat. 7.6]
    o No reports/plots involving multiple models or instruments [Feat. 5.4]
    o Uncertainty propagation [Feat. 7.7]
    o Filtering of NDACC data based on version number (to use the latest data) [Feature 7.8]
    o Integrate service at Belgian Institute for Space Aeronomy [Feature 7.9]